ABSTRACT

In an induction heating coil for heating a shaft member having multiple steps, annular conductors are separately disposed in the axis direction, the annular conductors having inner diameters so as to form predetermined gaps with outer peripheries of heating portions of the shaft member, the lengths of annular conductors 1, 2, and 3 are set so that the areas of the respective heating portions are approximately equal to each other, and the annular conductors are connected to each other in series, so that the respective step shaft portions of the shaft member are uniformly heated. The annular conductors described above may be formed to have shapes in conformity with the shapes of the heating portions of the shaft member and may be formed to have a step shape corresponding to steps of the shaft member having different outer diameters. In addition, at least one annular protrusion is provided for at least one of the annular conductors at a place corresponding to a root of a step of the shaft member so as to heat the root of the shaft.